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ABSTRACT

This study summarizes the effects of an educational experiment which used a light, single engine airplane to generate basic instructional and behavioral changes in an inner city junior high school class. The project involved 25 disadvantaged area, 13-year-old boys and their parents, four regular staff teachers, two pilot instructors and a college student tutor. Evaluative research sought to determine the feasibility of an interdisciplinary aerospace program, under the direction of average teachers, in motivating this group of low and underachieving pupils, characterized by negative self-perception, behavioral problems, poor attendance, truancy, high rates of suspension, and grades too poor for college entrance. Research objectives included a determination of the value of the flight program in terms of increased motivation. That is, the extent the flight program has succeeded in (1) motivating the students to achieve academically; (2) motivating the students to attend school more regularly; (3) motivating the students to become involved a greater percentage of their classroom time in instructional and less disruptive and resistant behavior; (4) elevating the level of self-esteem and aspiration of the pupils; (5) improving the chances of higher education for the pupil; and, (6) altering the perception of the teachers and parents of these youths as regards their scholastic ability. (Author)

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FINAL REPORT

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LEARNING THROUGH AVIATION

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SUMMARY

This study summarizes the effects of an educational experiment which used a light, single engine airplane to generate basic instructional and behavioral changes in an inner city junior high school class. The project involved 25 disadvantaged area, 13-year-old boys and their parents, four regular staff teachers, two pilot instructors and a college student tutor.

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INTRODUCTION

The Problem and Its Socio-educational Setting

Typically, disadvantaged, minority youths reach the inner city junior high school performing a year and a half below grade level in reading and math. Their deficit grows until these youths become "drop outs." In the Richmond Unified School District, Blacks comprise 23% of the secondary school population, but account for 41% of all dropouts.

Roosevelt Junior High is a Black segregated school. Almost 70% of the pupils are Black. There were 29 known dropouts at Roosevelt during the 1966-67 school year. This rate was seven times the rate at non-segregated junior high schools in the district.

Roosevelt Junior High also leads the district in suspensions. In the period September 11, 1967 to June 3, 1968 there were 141 suspensions in a student body of 660. By contrast, the control school had only 45 suspensions out of a population of 1067.

REASONS FOR SUSPENSIONS

	Roosevelt	Control School
Weapons, bodily harm	12	5
Fights	26	4
Tobacco, smoking	1	24
Non-compliance rules	55	2
Stealing	12	4
Defiance	8	1
Deface property	3	0
Truancy, cutting	12	4
Profanity	1	0
Insolence	11	0

Suspensions reach a peak in the eighth grade, the grade the flight group was drawn from. It is known that failing pupils frequently contrive to get suspended as they progressively fall behind in junior high school.[1]

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[1] District wide 22% of those pupils who scored in the 60 to 79 range in English had been suspended at least once. By contrast, only 9% of pupils scoring in the 80 to 99 range in junior high were ever suspended.

The negative influence of a stigmatized school on expectations of parents, pupils and instructional staff cannot be underestimated in assessing the effects of an educational innovation such as the flight project. The Roosevelt plant itself is a dilapidated, drab building, devoid of vegetation. The innards are gloomy, ill lit and depressing. The pupils refer to Roosevelt Junior High School as "the prison." The combination of old, monolithic architecture, closed campus rules and security devices bear out this label. Parents know that few Roosevelt students make it to college or career. Relatively few teachers request an assignment there. In the last two years the pupil population has been cut from 954 to 660 at Roosevelt, but the same problems still exist. The overworked counseling staff is forced to spend most of its time on discipline rather than in constructive counseling. Any general characterization of a school is bound to be unfair to the staff, many of whom are excellent educators, but Roosevelt must be labeled a custodial institution, which perpetuates educational failure in spite of its few successes.

Flight group pupils came from families with an average of 5.5 children. Nine of these families are receiving welfare assistance. In an additional eight families, the breadwinner was either a laborer or doing unskilled work. The major breadwinner in the remaining families included a boiler maker, cabinet maker, shipfitter, insurance salesman, drycleaning manager and chef. In the case of fifteen of the flight group youths a viable role model, in the form of a regularly employed father or successful older brother, was absent. Family size ranged from two children in the case of three families to nine children in two families. Interestingly, all of the smaller families were headed by an aunt or a grandmother obtaining welfare assistance.

Responses to structured interviews by the parent elicited little consistency of response in such areas as control over destiny, and expectations out of life. Respondents were almost evenly divided, with some fifty percent of the parents optimistic about the future. There was total agreement by the Black parents that most people on welfare require it because of things beyond their control. The majority of Caucasian parents disagreed with this statement.

Ninety percent of the parents agreed with the statement that there is a life after death and a similar percentage believe that "the devil actually exists."

Parents were asked if they had ever thought about what occupation they might like their son to have when he grows up. 74% answered negatively. 26% of the parents answered in the affirmative. Occupations suggested by this latter group of parents included: electronics, dentistry, law, teaching and ministry. Responses indicated that, overall, parents of flight group youths either had no idea as to what occupation their son might be fit for or inadequate and distorted information about occupations and their requirements. Those occupations mentioned as desirable all fell in the category of professions.

Asked how far they would like their sons to go in school, a majority of the parents stated they want their son to graduate from college.

Responses of flight group parents to the question: "How far do you want your son to go in school?"

Finish high school	4%
Some college or J.C.	30%
Business or trade school	9%
Graduate from 4-yr. college	57%
	100%

Apparently, aspirations of the parents are very high, with 87% of the parents desiring college education for their sons despite evidence of inadequate academic records.

METHODS

The Evaluative Research Design

The evaluative research design provided for constant retrieval, analysis and feedback of relevant data, thereby allowing a qualitative as well as quantitative assessment of outcomes. The establishment of an on-site evaluation station at the project school furthered this assessment and served to meet the diverse feedback requirements of respondent populations (e.g., teachers, pupils, administrators) with often divergent perspectives. The willingness of the schools to cooperate fully was essential in this regard.

Instruments

Research instruments included the following: Staff Confidential Schedule, Pupil Attitude Inventory, Parental Interview, Instructor Logs, SRA Math Test, Gates Reading Survey.

Base line data

The group selected for the flight program had the following characteristics: 1) all male; 2) 80% Black; 3) average age 13.3 years; 4) a resident of the disadvantaged or "target" area for a minimum of five years; 5) low and underachievement as measured by standardized tests and grades in academic subjects; 6) I.Q. scores ranged from a low of 78 to a high of 104; 7) one or more significant behavioral problems associated primarily with school, and/or family background. This group was matched with a control group at another junior high school.

Experimental group students were found to range from average to below average in reading ability. In no case did any of the original group evidence a very good ability in reading. 1967 verbal reasoning ability scores for the twenty-five flight group pupils indicated the following:

1965		1967		
Stanine	Number	Stanine	Number	Categorization
8	1	8	--	Fast reader
6)		6)		
5)	13	5)	13	Average readers
4)		4)		
3)		3)		
2)	11	2)	9	Slow readers
1)		1	3	Retarded

Thus, a progressive decline in reading ability, typical of the inner city school, had set in. At the inception of the flight project, not a single pupil was in the above average or fast reading ability category, and the number of slow and retarded readers had increased to almost 50%. Boys in the flight group as well as the control group exhibited a great range of behavioral problems in the year

preceding the experiment. A random selection of incidents from the cum folders of the flight group pupils follows: (incidents September 1966 to June 1967)

Name	No. of Recorded Infractions (Sept. 1966 - June 1967)	Teacher's Remarks
Elmer Carnes	13	Will not shut mouth, rolling on floor, cuts detention, left before teacher excused him, throws paper wads, etc.
William Ellis	5	Disturbs class making funny noises, does't pay attention, etc.
Dennis King	2	Refused to spit out gum, etc.
Melvin Smith	8	No home work, refuses to come in for detention, smart remarks, cuts detention, plays in class, etc.
Donald James	7	Fighting, will not keep hands off classmates, shouting in class, etc.
Anthony Douglas	15	Talking back, his fourth detention, using very profane language, disrupting class, etc.
Neal Jason	16	Sneaked out of class, noisy, back talk in class, missed detention, refuses to sit down, hit student in ear, etc.
Henry Jones	20	Hollering in room, passing licks, will not work, refuses to salute flag,[2] chewing gum, starting fight.
Frank Davis	9	Throwing airplanes, ripped up bulletins, throwing chalk, cut detention, etc.

Number of recorded disciplinary infractions ranged from a low of two to a high of twenty-three, with a class average of eleven. Obviously, this was a low number,

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[2] This pupil belongs to a fundamentalist religious organization which instructs its members not to take the flag salute.

reflecting only those incidents observed by teachers when they were in a mood to record same. Responding to a questionnaire, 29% of the pupils admitted to being sent out of the room by the teacher several times and an additional 35% at least once or twice. Similarly, 64% had been suspended from school at least once.

On the basis of interviews and attitude schedules, it was determined that those pupils selected for the program represented a sample of a Negro segregated school pupilation characterized by disaffection with the educational system, low self-confidence, poor self-esteem, belief that teachers are prejudiced, and with little faith in the future.

In response to the statement: "A person should live for today and let tomorrow take care of itself," almost half of the flight group agreed.

	Flight Group	Control Group
Strongly agree	24%	17%
Agree	20%	22%
Undecided	20%	5%
Disagree	16%	0%
Strongly disagree	20%	56%
	100%	100%

Response to the statement: "What is going to happen to me, will happen, no matter what I do."

	Flight Group	Control Group
Strongly agree	25%	12%
Agree	20%	12%
Undecided	12%	37%
Disagree	12%	24%
Strongly disagree	31%	5%
	100%	100%

Response to the statement: "A person should never stop trying to get ahead."

	Flight Group	Control Group
Strongly agree	50%	40%
Agree	15%	35%
Undecided	13%	5%
Disagree	12%	18%
Strongly disagree	10%	2%
	100%	100%

Again, the control group replied more positively, with 75% stating they agreed that a person should always try to get ahead as compared with 65% of the flight

group. Similarly, when asked whether they had a better chance of doing well in school than a year ago, 65% of the control group answered in the affirmative as against 40% of the flight group. These responses were elicited before any of the youths were selected for the flight group.

Asked about the future, the majority of the youths selected for the flight group were negative.

Response to the statement: "There is no sense looking ahead since no one knows what the future will be like."

	Flight Group	Control Group
Strongly agree	36%	5%
Agree	20%	15%
Undecided	5%	28%
Disagree	20%	28%
Strongly disagree	19%	24%
	100%	100%

A third of the flight group youths said that they did not have too much to be proud of as against 6% of the control group. Similarly, a far larger percentage of the flight group believed they should not expect too much out of life, as contrasted with control group respondents.

Response to the statement: "I do not have too much to be proud of."

	Flight Group	Control Group
Strongly agree	5%	6%
Agree	28%	0%
Undecided	29%	11%
Disagree	24%	28%
Strongly disagree	14%	55%
	100%	100%

Response to the statement: "You should not expect too much out of life."

	Flight Group	Control Group
Strongly agree	13%	6%
Agree	35%	17%
Undecided	13%	6%
Disagree	16%	4%
Strongly disagree	23%	67%
	100%	100%

Questioned in the month of June, preceding the initiation of the flight project, the majority of the youths selected for the program believed the school staff was prejudiced against Negro children. The majority of youths in the control group stated that the staff at their school was not so prejudiced.

Response to the statement: "How about prejudice against Negro children? What would you say about the teachers and other people who run your school?"

	Flight Group	Control Group
All are prejudiced	5%	0%
Most are prejudiced	16%	6%
Half	40%	11%
Most are not prejudiced	13%	40%
None are prejudiced	26%	43%
	100%	100%

The youths in the flight group perceived themselves as capable of obtaining fewer honor grades and less higher education than did those in the control group.

Response to the question: "What grades do you think you are capable of getting in school?"

	Flight Group	Control Group
A's	13%	11%
A's & B's	25%	55%
B's	16%	12%
B's & C's	34%	22%
C's	12%	0%
D's	0%	0%
D's & F's	0%	0%
F's	0%	0%
	100%	100%

Response to the question: "How much schooling do you think you will be able to obtain?"

	Flight Group	Control Group
High School	9%	0%
On the job training	9%	0%
Trade school	0%	0%
Junior college	32%	24%
4-year college	50%	76%
	100%	100%

Clearly, the flight group youths had acquired a less positive attitude toward their educational life's chances than did the control group. In order to succeed, the flight program would have to overcome some important institutional obstacles, which apparently inflicted a lesser handicap on the control group youths. Major problems include the institutional effects on academic behavior of the high school setting and family background dimensions.[3]

FINDINGS AND ANALYSIS

The Roosevelt Flight Project consisted of four instructionally related educational units. The first was an in-school series of classes which segregated the twenty-five flight group youths in a special Aerospace program. Four teachers, two male and two female, were in charge of this program and met frequently to confer on progress being made. Each teacher was responsible for only one subject. (Students received instruction in English, Social Studies, Mathematics and Industrial Arts.) Although the understanding was that the program was to be interdisciplinary and related to aviation in general, teachers presented material as they saw fit. The teachers utilized special aviation-related materials to the extent of their availability. No special effort was made to supply optimum teachers for the project and only one of the instructors had previous experience with airplanes. Several hours of free flight time was made available to the staff in order to get them acquainted with small planes and the aviation culture.

The staff varied greatly in the time allocated to the "new curriculum" as opposed to the traditional or regular school program. The English teacher spent considerable time on oral presentations calculated to improve the tower communication of the student pilots and supported the student council. She also arranged to have small groups of flight class youths give presentations to nearby elementary schools. Here, the flight group members became the teachers to wide-eyed, admiring sixth grade children.

The Industrial Arts teacher presented many of the science concepts connected with flight by means of lectures and blackboard discussions. The students had some opportunity to work on airplane models and learn aviation vocabulary.

As in all aerospace classes, instruction was basically dyadic, with individual pupils responsible for the turning in of assignments, completion of examinations, etc.

The Mathematics teacher frequently brought flight-related materials into her lesson, but the greater part of her course was orthodox, and she rigidly adhered to the State text. A high measure of compliance was expected on the part of this

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[3] Recent research documents the overwhelming significance of school and familial environment on the achievement of students. See, for example, A.B. Wilson "Residential Segregation of Social Classes and Aspiration of High School Boys," Amer. Sociological Review, 24, 1959, pp. 836-845. E. McDill, et al. "Institutional Effects on the Academic Behavior of High School Students," Sociology of Education. Summer 1967. Vol. 40 No. 3, pp.181 -199. Elder indicates the effect of family values and childrearing practices in the development of the achievement potential. G. Elder, Jr. "Achievement Orientation and Career Patterns of Rural Youth," Sociology of Education, 37: Fall 1963,pp. 30-58.

instructor to an "old school" routine of disciplined, dyadic instruction.

The Social Studies teacher received greater freedom to experiment with the curriculum, not being bound to prepare his pupils for the state mandated achievement tests, nor the evaluation at the hands of the following year's teacher. Actually, pressure for orthodoxy came from the flight students themselves, who knew that their friends in other classes were learning the Constitution and that a test on "government" was required for graduation. Curriculum innovation in this class was apparent at mid-year after the introduction of a student teacher from the University of California, Berkeley. The regular teacher gave this interne team status, allowing her to incorporate a number of innovative skills activities. An interesting flight related Social Studies curriculum was developed, including exposure to career opportunities in aviation through films, literature, guest speakers and field trips.

The second instructional unit consisted of a large number of field trips wherein the class was accompanied by teachers and parents. Locations visited included the U. S. Naval Air Station, Alameda; United Airlines Maintenance Shop; Oakland Airport Weather Bureau; FAA Control Center, Fremont; the Mare Island Submarine Installation; Travis Air Force Base; Hamilton Field; and University of California, Berkeley.

The third instructional phase consisted of small group tutoring by a University of California graduate student at Buchanan Field, the site of the flight activity. The tutor would drive four or five of the flight pupils to the airport and show them how to compute a navigation problem while one of their group received in-flight instruction.

The fourth phase consisted of instruction in a single engine light plane. Each pupil received ten hours of dual instruction during the first year of the project. Student pilots were exposed to a regulation private flying course, including pre-flight inspection, tower communication, traffic patterns, instrumentation and, of course, actual piloting of the craft.

The program was conceived as an interdisciplinary project, but during the first year lack of planning time coupled with major classroom control problems impeded progress. Classroom teachers were handicapped greatly by the lack of release time for program development and consultation. For example, the Mathematics teacher had four additional mathematics classes to instruct in addition to the aerospace class. The University of California interne mentioned earlier developed an excellent and imaginative program, but she had two commodities unavailable to the regular teachers, time and energy.

As indicated earlier, control problems normally abound at this junior high school. But, concentrating twenty-five "target area" youths, whose measured ability levels covered a wide range, in a single classroom, placed inordinate demands on an under-prepared teaching staff. Although good material was frequently presented, with individual teachers spending many hours of their own time hunting down aviation related materials for their courses, one teacher commented:

> "I feel there is this tension between the very top and those boys at the bottom. I believe the heterogenous class is a good thing, but this class lacks group spirit....I see much selfishness. We need extra aid, so we can give individual

help. And I really feel the need to talk it over with the other teachers. We don't integrate flying in much of the curriculum. For one thing, we don't have time to prepare materials."

In January, 1968, a Flight Project Representative Council was formed to further the goals of the project. Students, parents, teachers and counselors were included on the council. A summary of the minutes of a meeting of the council is suggestive of the many obstacles the project encountered in its first months of operation.

SUBJECT: Minutes of the Second Meeting of Flight Project Representative Council, February 15, 1968.

I. Attending: Mr. Thomas, Mrs. Smith (Parents), Mr. Barnes (counselor), Charles Ralph, Melvin Morris, George Boyd (students), Mr. Naymark (student tutor), Mr. Mullen (Coordinator of Special Projects).

II. Reports Regarding Carrying Out of Responsibilities

The student representatives reported on their discussion with students concerning disruptive classroom behavior and late television watching. Most students feel that the best way to deal with poor classroom behavior is to contact parents immediately and bring them in for conference with teachers. The use of control methods such as corporal punishment, detention and suspensions are not effective, according to students. A motion was passed recommending that in the future pupils responsible for bad behavior should be left at school during the field trip and those not responsible be allowed to attend the field trip.

III. Student representatives stated the group was unhappy about the shop class. While the students understand the need for learning the rules of flight and other material being taught in shop class, they feel they are not receiving the kind of experience in the use of shop tools that they want. The Council agreed with the student recommendation that three days of the shop class be devoted to lectures and two days per week the boys actually engage in shop work using hand tools. This could include work on the rocket, the airplane and their kinds of aviation projects. This recommendation will be discussed with the shop teacher at the teacher meeting next week.

IV. The next meeting of the Council is scheduled for March 21, 1968.

The students appeared to benefit greatly from their involvement in decision making. A greater maturity and self control occurred in the latter part of the year, concommitant with pupil and parent participation in the decision making process.

The field trips also proved to be an excellent means of generating change. Students were exposed to real world conditions and occupations providing them with a basis for evaluating the realism of vocational choices. The faculty and pupils were thereby able to better interrelate the ongoing curricula with actual industrial requirements.

At the beginning of the project, the students responded to an occupational questionnaire with nebulous or unrealistic choices. Early in the second year of the project, nineteen of the youths who elected to continue in the aerospace class were questioned on their occupational preferences.

Responses to question: "What kind of job do you want eventually?"

Pilot	5
Aviation mechanic	3
Control tower operator	1
Electronics	3
Professional athlete	2
Commercial fisherman	1
Businessman	1
Undecided	2
Airport carpenter	1

According to Tennyson, interpretation of data from research on career decision-making behavior raises serious questions about the current practice of imposing vocational directions or hard curriculum choices on adolescents while in high school. The number of pupils who make decisions based upon irrelevant and inaccurate information and the pattern of choice change during the early adult years argue for flexibility in educational programming.[4] It would appear that the Roosevelt Flight Project facilitated realistic career choices and served to maintain an "open," flexible curriculum for the participants. Importantly, job models which previously lacked relevance for economically deprived youths were provided.[5]

The role of the student tutor underwent great change in the early months of the project. Originally his job was to aid the pupils with flight related mathematical and navigational problems. A graduate student at the University of California, majoring in nuclear physics, he performed this task in an excellent manner. However, the tutor soon saw that the self-concept of his pupils was so depressed and their antagonism toward the white dominated social system, in general, and the schools, specifically so intense that they needed to relate more to an accepting, reinforceing human being that to a judgment-making mentor. Increasingly, his role became that of a counselor-friend and discussion leader rather than a subject oriented tutor. As the tutor commented:

> "I shifted quickly as I figured after we had discussed basics...to go on was getting boring. It was important for us to be friends. We needed to start a positive relationship, to establish rapport now. From the beginning they tested me to see if I trusted them."

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[4] See C. W. Tennyson, "Career Development," Review of Educational Research, Vol. 38, 4, October 1968, p. 355.

[5] See J. S. Himes, "Some Work Related Cultural Deprivations of Lower Class Negro Youths," Journal of Marriage and the Family 26:5 447-440 Nov. 1964. Himes found that race and class establish institutionalized conditions wherein lower class Negro youths are socialized to certain work-related cultural deprivations which influence their on-the-job acceptance and work performance.

N. M. Chansky, "Race Aptitude and Vocational Interest." Personnel and Guidance Journal 43: 780-84, April 1965. Chansky found on matching ninth grade Black and

There were two central components in the flight instruction phase. The first was a sleek, red-trimmed, two-place airplane, 3290 Juliet, which the flight group students came to know well during the first year of the project. The second was "Butch," a boyish appearing instructor, in his middle twenties, who was excellently qualified for his job by virtue of aviation expertise and the ability to relate well with students.

The following are excerpts from a field trip to the airport on January 3, 1968. Five of the project pupils were going through the preflight phase on our arrival.

Instructor: "You can see them checking all the important parts, such as the actuator rod, cotter pins, static system, surface controls. I allow each guy to handle the preflight completely himself now. I only observe. The kids climb all over each other to show me the points they are checking. This is the only problem--over-competition."

Asked about the optimum time for flight instruction and the objectives, the instructor responded:

"We believe at least 30 minute in-flight sessions are needed to maximize the learning experience. Now, the kids complain that the sessions are too short. But our prime objective is to motivate the boys. I believe the program is succeeding in this respect. Our prime objective is not to teach the fellows to solo.

"All our flights are cross-country. We are not teaching the kids to fly in itself, but to stimulate them toward school. During these cross country flights the kids learn radio operation, study the terrain, use of the compass, use their math for time and distance. They fly as much as possible.

"Confidence is one of the objectives. The boys are encouraged to handle the controls as much as possible during flight. They have made takeoffs and landings...with the instructor close to the controls, of course. We teach them to use power if needed. Then we teach flight attitude. They learn that if they're sinking too fast during the landing to give a short blast of throttle. This has made them more aggressive on the use of power."

The instructor stressed the responsibility of the student constantly. "You kids are doing the flying, so you take the responsibility." He emphasized getting pupils to learn their own potential, coaxing them to believe they will definitely learn to fly. The instructor was observed continually encouraging the pupils' curiosity.

"No matter how stupid the question might be I get them to ask it. As they get more confidence in me they are increasingly

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Caucasian pupils on aptitude, that the Black youths were more interested in those jobs calling for social interaction, money exchanges and verbal fluency. Caucasian youths were inclined to jobs involving a concern with nature and machines. It would appear that Flight Project Youths now select occupations in the nature-machine category preponderantly, reversing the usually noted occupational trend for Black youths.

unafraid to ask questions. So, they ask: 'What is this?' and I say: "Now that's a good question." This results in their increasing their questions. I tell them 'you're dumb for only one moment if you ask it and I tell them that one might be the key which makes everything fit.'"

The instructor was asked to comment on the relationship of formal education to flying.

"Formal education means little in flying. I instruct doctors, attorneys and Ph.D's, and they are no better than the project kids at learning to fly. In fact, the kids do better as a group. I have some guys with several degrees who are so afraid to make mistakes, they can't learn to fly. Of course, formal education helps in study. An "A" average is no sign anyone will be a good pilot, although I tell the boys the smarter you can get, the better. But you don't need great academic learning to fly. Flying is a great equalizer, I feel."

The instructor, who was by now called "Butch" by the students, encouraged them to study more. During his post-flight quizzes questions included: "How do you turn an airplane? Why do you lead with the rudder? Why trim? What is torque?"

Asked about his attitude toward minority group youths during the course of the project, Butch responded:

"Attitudes of the instructors here changed very much. Many of the Blacks I met in the service I believed weren't too bright. My belief about their mental ability has changed, for the better. The majority of these kids are of equal intelligence in approaching flying, regardless of their race. This program is a leveler. No one is better than anyone here and nobody has to have an inferiority complex about his ability to achieve."

Butch encouraged all his pupils, including the flight group youths, to work on a first-name basis.

"I set up no social barriers. But in a group situation I force them to raise their hands to keep chaos down. Look, when I'm teaching a doctor, we can't take the time for 'Doctor Jones, would you please...' It's more efficient to say, 'Chuck, more throttle.' I can work easier with the boys this way....on their level and get their confidence."

Analysis of Outcomes

Pre-flight and Piloting

Psychologically and physiologically flying is not a normal human activity. Millions of Americans are fearful of airplanes. Other tens of thousands must take motion sickness pills before flying. To be successful, a pilot must learn to avoid many natural reactions, such as pulling back on the stick in order to keep from

falling.[6] The project instructors found that one Roosevelt student froze at the controls and refused to look out of the cockpit. This pupil consistently disrupted the classroom, refusing to admit to his fear. Finally, at mid-year, this relieved youngster was dropped from the program.

Further, piloting is foreign to the typical life styles and territorial privilege of disadvantaged minority members. To pilot a light plane safely requires intense pre-planning, a concern for safe functioning of mechnical parts, punctuality, clear speech, and absolute trust in one's instructor. Until very recent times, discrimination against Blacks in aviation has been rife. The first Black to become an airline captain achieved this distinction only five years ago.[7] Blacks have been largely viewed as intruders in airport restaurants, maintenance shops and cockpits. There have been notable exceptions, such as Black aviators who have distinguished themselves in wartime, but by and large, the sky is "honky."

According to the flight instructors, all the student pilots have learned to be careful and exacting in inspecting the plane prior to takeoff. The students apply carburetor heat and go through all safety procedures themselves, knowing the reason why, according to their instructors. They now show up on time and indicate punctuality and trustworthiness around the airplane. By the sixth month of the project, the students had come to conceptualize in dramatically new areas. As their chief instructor, Butch, stated:

> "I can say that not a single one of the boys is bad at Math. They have really learned to read the clock, to relate time to distance and incorporate time into their flight plan, mentally. And...they can associate terrain and distance on the map now. The boys are learning the traffic pattern well."

Additionally, the flight group have all shown a definite improvement in motor coordination, according to the pilot instructors. Questioned in February, the chief instructor stated:

> "They have all learned to lead with the rudder during turns, to manage the takeoff. About a third now manage the takeoff completely. They are learning a attitude control as well."

The group had learned to overcome their instinctive fears of flying and achieved a mastery over an environment as well as their senses. This accomplishment was evident by their ability to perform 2 G turns and fly on instruments. As they did 2 G and negative turns, the students were instructed in the dichotomy between their feelings (e.g., vertigo) and physical referents. They were taught to always believe the instruments. The instructor would deliberately disorient the pupils and then have them turn to their instruments to determine the plane's

---

[6] W. Von Langleweische, Stick and Rudder, McGraw Hill, New York, 1944. "The wing is new and not yet familiar to us of this generation...our natural reactions mislead us...the pilot must learn not to give in to his instinct of self-preservation, but to substitute for it carefully trained reactions." P.4.

[7] This Black pilot was killed while airlifting food to Biafra.

attitude and correct this attitude, e.g., bank out of a turn. The students were also observed flying under the hood. Here they received rudimentary instrument instruction, and performed well. Low and underachieving students who six months previously were viewed as unmotivated, resistive, uninterested and unreliable about school work and showing a short attention span were actively piloting. Here they displayed a fine capacity to react to empirical referents. This achievement manifested a sophisticated level of learning.

The project students became more confident and competent in their ability to communicate orally. At first, the boys were extremely reluctant to speak with the airport tower. As the flight instructor related:

Pilot: "I'll let you talk with the ground control today, Dave."

Student Pilot: (an an anxious, whining voice) "Oh, man, ah cain't do dat. I cain't."

Pilot: "Here, I'll write it down on a piece of paper and you just read it."

Student Pilot: (reading from paper) "Buchanan ground control. This is 3290 Juliet at south end tie-down area, taxiing for takeoff. Over."

By the end of the first year the students no longer used "southern" speech or brogue, nor phrases such as "hey, man." And they are no longer dependent upon the paper instructions in contacting the tower. All instructors state that the boys speak much more clearly and are easily understood.

During interviews the instructor pilots stressed the great range of types the flight group youths represented. They were initially amazed to see how different the boys were. To them the project was a real challenge because of this diversity. The overwhelming value of the airplane then is that it demands a true individualizing of instruction to achieve teaching success.

Behavioral Competence

Classroom control in "target area" schools is a major problem. Early in the school year, aerospace classes still exhibited a high level of chaotic behavior. By mid-January, a noticeable improvement in classroom climate had become evident. The instructional vice principal claimed that the change in the shop class was profound.

> "Compared with September and October, the boys are a thousand percent improved, all around. They are mostly attentive and involved for the first time. I see interested expressions... I'm generally elated at the change in the flight boys."

The interne teacher in the English class stated that with the exception of two or three pupils, there had been a visible growth in the behavioral skills of the flight project pupils. She commented,

> "Today, unlike before the Christmas Holidays, the class is willing to launch into the first activity of the period with a minimum of resistance, confusion or delay. Resistance to designated assignments has lessened considerably, although occasionally some pupils come to class pre-determined to buck

> the 'establishment' that day. Between November and December at least three pupils would consistently ignore every assignment, either by passive resistance or open defiance."

According to this instructor, the quality of class work had improved and their tolerance level elevated to the point where the class could move along at a quicker pace. In all classes it was noted that positive classroom behavior standards had become increasingly routinized. Pupils had learned to raise their hands and to patiently await recognition. There was little movement about the class without permission and a far greater willingness to accept compromise than in the early months of the project. Classes were found to be far more manageable and motivated than during the first semester. The ability of individual teachers to communicate with the students, to gain rapport, was seen to be directly related to this improvement in classroom control.

An additional cause of this greater classroom cooperation was the change in interpersonal behavior on the part of the flight group pupils. In February a teacher stated:

> "...80% of the class is consistently to generally cooperative and only a small fraction sporadically resistant. Their assignment folders have all improved in neatness, order, and design. Although they know the folders are worth 20% of the final grade, this meant nothing to most of them last semester. Their self-esteem has definitely risen."

The graduate tutor spent an average of seventeen hours per week with the boys. He found that they matured socially in the course of his contact with them. In May he commented:

> "Each one of the boys is more confident in himself. You can see this. They are freer in their conversations....more punctual getting to school in time for the airport trip. They can now sit down before I do and sit for an hour at a time. This was absolutely impossible in the beginning. It took the better part of a year for them to learn to sit. But they're grown up now and have an improved attitude toward themselves."

The tutor claimed to notice remarkable changes in the boys, although many of them require much additional help in the form of long-term counseling. He found that they had a great need to talk to him about their problems, especially problems of their families, including the great lack in their home life.

To indicate the extent of personal growth on the part of project participants, brief case histories will be presented. The first represented the bottom of the class in ability and was one of the more difficult behavioral problems during the first semester of the project. The second youth indicates a far higher measured ability but had failed Spanish, History, Mathematics and Science the Spring semester before the project began.

Charles Roberts is a handsome, thirteen-year-old who began the project year with a large chip on his shoulder. The winter of 1967, he lost his father and now lives with his grandparents. During the 1966-67 school year, Charles had 23 recorded disciplinary infractions, including disrupting class, rudeness, cutting detention, loud back talk, throwing paper, fighting, etc. His test grades were below passing in Science, and he received D grades in Math and English.

He is the only child in the home and his guardians were greatly concerned over recent developments in his character. They informed the counselor and a teacher early in the year that Charles should be....."whipped, because I don't know what to do with him any more."

The first semester of the Flight Project found Charles at least one period a day in the counselor's office. He was regularly ejected from two of the aerospace classes for causing disruptions. His behavior was described by teachers as sulking. He refused to "open up" with them, or even to defend his actions. Charles' friends were not in the Flight Project but were among the "rough" kids at Roosevelt. It appeared that he wanted to identify with this element. He would come to his aerospace classes frequently without proper materials or his assignments completed. When denied constant attention from his teachers, he tended to erupt. By December several of the staff had written him off and there was concern he would have to leave the Flight Program. In January he was sent out of the class for pounding Mike Brown with three blows heard across the room.

The tutor and two regular instructors noted a change occurring in Charles near the end of February. Said one instructor:

> "In the past two months near miraculous changes have been effected in Charles' attitude and class performance. Charles used to sit and scowl at me for fifty-five minutes....that is when he managed to remain in class. His class record recently shows a steady upward swing from a C to a B for the semester. Most recently he has submitted several "A" papers which are neat in appearance and more complete in content. His academic record graphs like a "hot security stock," but his attitude modification is what impresses us all so much. Now, he unbegrudingly completes all assignments, assumes monitor responsibilities, cooperates in small group activities and was radiant the day he captained the Spelling Bee team. Most recently he stood up before the class and commanded silence so that I could give directions for organizing our play, an activity he was exceedingly interested in. He played the role of Wilbur Wright."

Charles cannot be designated a complete convert to "goodness" by any means, but he has begun to "open up" and respond to help from adults. His need for a viable role model of long duration still has to be met although it would appear his relationship with the tutor and the flight instructor helped enormously. In 1967 his grade point average was 1.2. In 1968, after one year in the Flight Project, his grade point average was raised to 2.0.

Charles' September, 1967 achievement test score in mathematics placed him in the 36th percentile, 4th stanine. On post test in May of 1968, Charles scored at the 89th percentile.

Bob Anderson is thirteen and one of the shorter pupils in the class. He lives with his grandparents as does Charles. Bob had six recorded disciplinary infractions for the 1966-67 school year, including refusing to strip for Physical Education, and cutting detention. His average I.Q. is 101, but he failed in four "solid" subjects the previous year. Bob was extremely happy at being selected for the project and has begun to read space and aviation books avidly. Generally, he is earnest and cooperative in class and is well liked by the flight instructors, who

joke about the number of cushions Bob has to place under him so his legs can reach the rudder pedals. Bob's major problems appear to be overly permissive grandparents, who are unable to set limits on his behavior; and his physique, which made him an object of harassment in class. His teachers unanimously state that Bob very much wants to learn and hope the excessive bullying he is subjected to doesn't ruin his chances. At least half of the flight group students were ridiculed intensely over their height, weight, hair texture, skin complexion or an obvious impediment.

By mid-year, it was observed that Bob began to mingle with those students who were moving fastest academically in the project. He now expresses the desire to be a pilot and his grades are showing improvement, although one of his high school teachers states that Bob is still performing far below his true potential. His Spring 1968 grade point average was 2.7 as compared with .4 the previous year.

Parental Expectations

Follow-up interviews were conducted with parents at the end of the first year of the project. All respondents highly praised the Flight Project, and their expectations for their sons were elevated. Excerpts from these interviews are as follows:

> "I was very excited and thrilled about the program. All the neighbors and friends of ours were very happy for Bob and wished their sons could have been chosen."
>
> "Donald likes it. He does his homework steadily now. This is a new habit....The neighbors and relatives envy us. We are very proud....Donald writes his brother in Viet Nam about his flying and his brother writes him back to do well 'cause it's an opportunity he never had."
>
> "I was afraid of flying at first, but through the program, Steven and I learned a great deal. Steven is now more interested in school. He wants to go to school more now."
>
> "The flying and all made a difference for Billy. It kept Billy out of trouble all year. He is looking forward to being in the flight program again and wants very much to become a pilot. This has made a better student out of him. For the family, it has given us a little prestige and honor to have a child off this street to be in the flying program."
>
> "Elmer now wants to have an aviation job. Mr. White (husband) feels that Elmer's chances in life are greater now. He is more capable. The neighbors think it is great....but I think some of them are even jealous and act hostile to Elmer."

Parents of the flight group students all express pride that their sons were chosen for the program. Generally, they found their sons more enthusiastic about school since their involvement and believed they could obtain better jobs because of this preparation.

Staff Expectations

One of the more important gains achieved by the Flight Project was in changing the expectations of the adults who were involved. Given the opportunity for their sons to be included in a costly, high status activity, the positive change in parental expectations was more or less expected. Although the project teachers were early fascinated by the innovativeness of the program, many of them tapered off in their confidence when the pupils failed to instantly score on their examinations or behave like middle class Caucasian pupils. It was not that the faculty was not deeply concerned so much, as that they received a surfeit of heckling and harassment from much of the class rather than appreciation. The problem was that too much was expected in a few short months in an area where deviance was high and the worst possible familial and educational conditions obtained. The primary objective in the first year was to build self-esteem, to build confidence in the disadvantaged student and his family. The instructional vice principal saw the dilemma clearly.

> "The great gains the first year as I see them were social. We built self-worth for these kids. The academic gains are bound to come later if we succeed in this."

Unfortunately, the staff did not have this perspective in the beginning. In the early months, each teacher felt that student X or Y should not be in the program. As one teacher later said, "I thought half the class would soon be eliminated at this rate." In subsequent meetings the staff exchanged information about the disparaged students and discovered favorable things. Thus, all but one student was retained the first year.

The faculty cooperated avidly with the class, helping the flight group with its school dance, spring picnic, and other events. At year's end, the staff recommended that 100% of the flight group be continued in the Senior High School Aerospace program.

Obviously, staff expectations in the process of change are difficult to document. The graduate student tutor was apparently profoundly affected by the changes he saw in the flight group students. His involvement caused him to change from a physics to a social science major after earning his masters degree at the University.

One of the flight group staff, who is teaching at Drover, a newer integrated junior high school, this year was interviewed recently and requested to compare his two assignments.

> "Last year and at the beginning of the semester I would have said better by far this year here than at Roosevelt. Many of the kids last year were troublemakers, you know. I wondered at times how some of them would ever learn anything. They came into the flight class unprepared. They didn't know the basic concepts they should have learned in the seventh grade.
>
> "Yes, a few weeks ago I would have said that I like my classes better this year. But, no. There is something missing here at Drover....a certain spark that the flight kids had. I can't

explain it...but they were turned on...motivated. Through it all...the handicaps of inadequate preparation, the noise. The flight kids on the whole seemed to want something my present classes aren't striving for."

Academic Gains,

Academic as well as character growth has occurred among the majority of flight project students in the course of the year. In order to further document these changes, grades earned by the students for the first quarter of the 1968 school year are included in this report. Gains occurred in the following areas: 1) attendance; 2) reading ability; 3) measured achievement and grades; and 4) general ability level.

Attendance

District-wide, absenteeism is a critical problem in target area schools. The boys in the control group averaged fourteen days absence during the 1967-68 school year. The normal absence rate at Roosevelt Junior High School is twelve to fourteen percent. Flight school students had a two percent overall absentee rate. Teachers have commented that the flight boys come to school even when they are sick. Motivation to attend school has extended to the second year of the project. At Kennedy High School, the site of the Aerospace Project for 1968-69, the absentee rate has averaged two days per flight student this year. The average number of days absent for a comparable ninth grade mixed class for the first quarter of the year was 2.9 days.

In response to the question: "Have you ever been suspended from school?" 60% of the flight group youths indicated that at some time they had been suspended before reaching the eighth grade. 16% admitted to being suspended frequently and 44% stated that they had been suspended at least once or twice. 48% of the control group respondents admitted that they had incurred some type of suspension during the same period.. 12% had been suspended frequently and 40% said they had been suspended once or twice.

During the year of the Flight Project demonstration none of the aerospace students were suspended from school. On the other hand, 20% of the control group were suspended for periods up to fourteen days. Eight of the control group pupils manifested severe disciplinary problems. Excerpts from the disciplinary records of three of the control group pupils are as follows:

Name	Offenses	Suspended (1967-68) Full days	Part days
Jerry Warren	Refused detention, insolance, carrying knife, hit student with fist in class, theft of money, nine tardies, disrupting class, etc.	4	4
Dwayne Perry	Disrupting class, insolence, cut detention, etc.	1	2
Frank Edwards	Cut detention three times, fighting constant talking, defiant to student supervisor, smoking in gym, sleeping in class, throwing BB's, etc.	14	5

Originally, youths who participated in the Flight Project had a history of suspension-type offenses in excess of their control group counterparts. But, suspensions for this group ceased after their involvement in the project. By comparison, the suspension rate of the control group dropped; but the nature of the offenses increased in severity.

Reading Ability.

Reading ability increased remarkably for all flight group students. One instructor commented:

> "The students now impress me with their ability to read rather complex adult level material which I have given them in the form of Civil Air Patrol books and magazine articles on aviation. Even the slow readers manage to achieve an average understanding of what they are reading."

Another instructor stated that the flight students are capable of absorbing vast amounts of information related to flying and that there is considerable carryover into other areas. In the Aerospace History and Social Science course at the senior high school level, reading ability enters importantly in determination of the grade. Flight group youths in this course performed far better than did the control group, as evidenced below:

1st QUARTER, 1968

FLIGHT GROUP	CONTROL GROUP
World History	World History
A - 13%	A - 0%
B - 31%	B - 17%
C - 31%	C - 47%
D - 25%	D - 24%
F - 0%	F - 12%
100%	100%

Most recent test scores for the flight group indicate that four of the students are now categorized as fast readers, 15 average readers, five slow readers and only one as retarded.

Measured Achievement

The major test administered was the Science Research Associates multi-level mathematics test. However, test results will not be available until January, 1969. Letter grades received at the conclusion of the Spring semester indicated that in all but four cases the overall academic average rose from a half to a full grade level. These four dropped by .3 grade points. Of the twenty-five boys, seven received honor grades, another nine received fair grades, e.g., C average, and nine received passing grades. Flight group youths received F grades the first year in only one subject, mathematics. But, contrasted to the control group, the flight project students earned more A's and fewer F's during the first year of the demonstration.

MATHEMATICS GRADES FOR 1967-68

	A	B	C	D	F
Flight Group Math Class - 8th Grade	7%	24%	40%	21%	8%
Control Group Math Class - 8th Grade	4%	18%	37%	26%	15%

First quarter senior high school grades for the flight group indicated that forward academic progress of the flight students was continuing.

1st QUARTER, 1968

FLIGHT GROUP		CONTROL GROUP	
Mathematics		Mathematics	
A -	19%	A -	6%
B -	25%	B -	23%
C -	31%	C -	42%
D -	25%	D -	23%
F -	0%	F -	6%
	100%		100%

In overall grade point average, 13% of the flight group earned an A average the first quarter of 1968. There were no failures. By comparison, the control group had no A or B students and 18% received a failing grade point average.

OVERALL GRADE POINT AVERAGES IN FOUR
SENIOR HIGH SCHOOL "SOLID" SUBJECTS
1st QUARTER, 1968

	A	B	C	D	F
Flight Group - 9th Grade	13%	25%	37%	25%	0%
Control Group - 9th Grade	0%	0%	59%	23%	18%

The senior high aerospace mathematics instructors stated that the Flight Project class is doing comparable work to his pre-college algebra classes, totalling 170 students. The Flight Project students cover exactly the same material, he claims, and the top students in the aerospace class are equal or better than the top in his regular algebra class. He intends to obtain pre-college algebra designation for the aerospace mathematics class because of the excellent work the students are performing. Why are the flight group youths doing so much better the second year in this class? First of all, two of the major disciplinary problems were dropped from the project in the middle of the first Fall quarter, greatly lessening classroom disruptions. Secondly, as in the case of the mathematics instructor, superior instruction obtains. He is well experienced, whereas the previous aerospace mathematics instructor had never taught mathematics before. Thirdly, the second year aerospace instructors have a period of release time, which allows them to build a true interdisciplinary program and consult among one another. Fourthly, there is an in-school coordinator-teacher who articulates the

instructional components. And lastly, all discipline is self-contained. That is, the project staff counsels the students, handling all discipline for the aerospace group internally rather than sending malfactors to the Dean's office.

Another important difference obtains between the Flight Project class and the control group at this time. Whereas the aerospace pupils are enrolled in college level subject areas, 100% of the control group youths are in non-college tracks. That is, the control students are in primarily vocational-industrial and commercial courses. This is concommitant with District statistics, which indicate that fewer than one-fifth of Negro students are in the college preparatory track. The very fact of being in a specific track is likely to have a marked effect upon the pupil's level of aspiration and the effort he exerts academically.

Level of Aspiration and Self-esteem

The following table would appear to indicate that the aspiration level of the flight group declined in the space of the demonstration year while that of the control group remained high, with 100% hoping to graduate from college or junior college. But, subsequent analysis indicates that flight group experience modified the aspiration level of the participants in a positive direction.

	Control Group	Flight Group	
	1967-68	June '67	May '68
Hoping to graduate from 4-yr. college	76%	61%	50%
Hoping to graduate from junior college	24%	26%	32%
Desiring trade school and/or on-the-job training after graduation	0%	13%	18%
Desiring to graduate from high school only	0%	0%	0%
	100%	100%	100%

Recently, researchers have determined that aspirations among lower class children frequently exceed real and predicted achievement.[8] Level of aspiration, when unrealistically high, reflects a false optimism which may result in uncertainty and frustration. When compared with the percentages of low-income youths who actually attend and graduate from college, the original aspiration level of the control and flight group youths must be viewed as unrealistic. This overexpectancy of success in higher education is subscribed to by parents, according to our interviews. Thus, a major educational problem is that of motivating disadvantaged youngsters to succeed academically, based upon a realistic assessment of eventual capability. The substitution of apathy with frustration hardly constitutes a positive gain.

We found that after a year in the Flight Project, more of the students hoped to attend junior college. And more of the participants had focused their aspirations

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[8] A. B. Wilson, "Social Stratification and Academic Achievement in A. B. Passow," ed. Education in Depressed Areas. N. Y. Bureau of Publications, Teachers College, Columbia. 1963. pp. 217-235.

on a technical school education. Interviews with these youths determined that their knowledge of the occupation and professional structure had been significantly expanded due to project involvment. Industrial field trips, class visits by professionals, films and class discussions, etc. had served to crystallize the group's knowledge of job opportunities and requirements. A better fit resulted between academic goals, latent ambition and the occupational world. This can be seen by the fact that the unrealistically high aspiration level of the control group remained high, and did not drop in the course of the demonstration year. By contrast, that of the flight group declined by some ten percent and the percentage of flight group youths determining to attend junior college or obtain on-the-job skill training increased. This change on the part of project participants reflected a more realistic self-appraisal of individual capacity as well as increased knowledge of the professional and technical job market.

Flight group youths evidenced less fatalism, more optimism about the future and a greater incentive to achieve than was the case when they were first selected for the project.

Responding to the statement, "A person should never stop trying to get ahead," 81% of the Flight Project youths now agree. A year previous, only 65% of the pupils agreed with this statement.

In response to the statement, "What is going to happen to me will happen, no matter what I do," less than one third (31%) of the project youths are now in agreement. A year ago, 45% of the students agreed with this statement.

Responding to the statement, "There is no sense looking ahead since no one knows what the future will be like," 37% of the project youths presently agree. By comparison, a year ago, at the very beginning of the project, 56% were in agreement.

Responding to the statement, "I do not have too much to be proud of," today only 10% of the Flight Project youths agree (79% disagree, 5% undecided). At the beginning of the project, 33% of the students agreed with this statement. (See table on page 6.)

Negative attitudes on the part of project youths toward school staff declined at the end of the demonstration year. Earlier, 61% of the students in the Flight Project perceived the staff as prejudiced. (See table on page 7.) Now, less than half (48%) of the project youths claim that some or most of the staff is prejudiced.[9]

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[9] The pronounced effects of institutional segregation, alluded to earlier when we termed Roosevelt a stigmatized, Black segregated school, show up here. Thus, only 17% of the Black students from integrated, district junior high schools state the staff is prejudiced against them.

Change in this area is absolutely essential to academic success. Educational achievement among Blacks has been found to be heavily dependent upon the extent to which they believe society is just.

See, for example, J. S. Coleman, Equality of Educational Opportunity, Washington, D. C. Govt. Printing Office, p.320.

> "For children from disadvantaged groups, achievement or lack of it appears closely related to what they believe about their environment; whether they believe the environment will respond to reasonable efforts...."

Conclusions

Data collected in the first year of the Flight Project indicate that major successes were achieved in several areas. Changes in the affective domain are known to be slow, but project students were found to be more positively motivated to achieve academically, and make something of their lives. Compared with the control group, project students incurred fewer disciplinary problems, attended school far more regularly and earned better grades. The self-concept of project participants was significantly enhanced as shown by increased self-pride and belief in the future.[10] Importantly, Flight Project youths were realistically motivated. Not only is their level of aspiration high; but as a consequence of the project, their ambitions are focused on tangible goals they may legitimately aspire to. Realistic vocational aspirations and more precise career planning geared to a rewarding socio-economic status were facilitated.

The initial year provided the flight youths a novel vision of an exciting opportunity structure. Enterprising instructors tapped local resources and integrated aviation into the curriculum sufficiently that job-related social competencies were instilled in most of the students.

Shown that they count for something by project staff, in time the students responded to this confidence by improved social and academic behavior. To a great extent, the vast academic discrepancy between these "have not" youths and the "have" students in the District has been obliterated. The Roosevelt Flight Project was able to build a motivating atmosphere in which disadvantaged children could more fully discover and respect themselves.

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[10] The project participants received tangible evidence of accomplishment during the first year of the project. See Appendix I and Appendix II.

APPENDIX I

JEROME R. WALDIE
MEMBER OF CONGRESS
14TH DISTRICT, CALIFORNIA

WASHINGTON ADDRESS:
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LONGWORTH HOUSE OFFICE BUILDING
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PHONE: 225-5511

Congress of the United States
House of Representatives
Washington, D. C.

July 2, 1968

COMMITTEES:
PUBLIC WORKS
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PHONE: 687-1200

RICHMOND OFFICE:
3915 MACDONALD AVENUE
RICHMOND, CALIFORNIA 94805
PHONE: 233-4425

David Ford
151 - 4th Street
Richmond, California 94801

Dear David:

I noted recently in the Richmond Independent that you were presented a "Certificate of Achievement" upon graduation from the Roosevelt Flight Project at Buchanan Field in Concord.

Please accept my sincere congratulations upon this significant achievement. May I also extend to you my very best wishes for continued success in your educational endeavors.

With kindest regards, I am

Sincerely,

Jerry Waldie

JEROME R. WALDIE
United States Congressman
Fourteenth District

JRW:oe

CERTIFICATE
of
ACCOMPLISHMENT

This certifies that

_____

has met all academic and flying requirements of the

ROOSEVELT FLIGHT PROJECT

An Experimental Project of the Richmond Unified School District

JUNE
1968

_____
Robert Mullen
Project Director

_____
Walter Felizianetti
Flight Instructor

_____
James Nelson
Principal

_____
Ronald Naymark
Advisor

APPENDIX II